REMARKS

Claims 1-43 remain pending in the application. Claims 1-43 are amended. Reconsideration of the rejection and allowance of the pending application in view of the following remarks are respectfully requested.

As an initial matter, Applicants note that the Examiner has not acknowledged Applicants' claim for foreign priority, or receipt of the copy of the certified copy of the priority document. Applicants request that the Examiner acknowledge Applicants' claim for foreign priority, and confirm that the copy of the certified copy of the priority document has been received, in the next Office communication.

In the Office Action, the Examiner rejected claims 4-9 under 35 U.S.C. §101 as being directed to non-statutory subject matter, because they were directed to a communication protocol. Applicants have amended claims 4-9 to be directed towards a method. Applicants submit that the amended claims are directed towards statutory subject matter, and request that the Examiner withdraw the rejection under 35 U.S.C. §101.

In the Office Action, the Examiner rejects claims 1-43 under 35 U.S.C. §112, 1st paragraph as failing to comply with the enablement requirement. Specifically, the Examiner asserts that the claimed feature "the first transceiver and the second transceiver are separated by a distance greater than a maximum transmission range of at least one of the transceivers" is not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. In this regard, the Examiner asserts that it is not clear how the repeater knows whether the transceivers are separated by a distance greater than a maximum transmission range of at least one of the transceivers. Applicants respectfully traverse the rejections for at least the following reasons.

First, Applicants submit that the claims do not require the repeater to know whether the transceivers are separated by a distance greater than a maximum transmission range of at least one of the transceivers. Rather, the claims merely recite that the first transceiver and the second transceiver are separated by this distance.

Further, Applicants submit that determining whether transceivers are separated from each other by a distance greater than a maximum transmission range of at least one of the transceivers is well within the skills of one of ordinary skill in the art. For example, during the design stage of a radio network, one could consult product specification information to determine if a repeater will be necessary. During installation, one could easily perform in-situ testing of transmission ranges to determine if two transceivers can communicate, or whether they require a repeater station. If post-installation communication problems appear, one would realize that the separation distances between the transceivers is too large, and a repeater is required. Applicants submit that each of these assessments would be well known by one of ordinary skill in the art. Thus, Applicants submit that it is unnecessary to elaborate in the specification as to how to determine whether transceivers are separated from each other by a distance greater than a maximum transmission range of at least one of the transceivers, and request that the Examiner withdraw the rejections under 35 U.S.C. §112, 1st paragraph.

The Examiner also rejects claims 1-43 under 35 U.S.C. §112, 2nd paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. Specifically, the Examiner asserts that it is not clear what is meant by the claimed recitation "a maximum transmission range of at least one of the transceivers". In this regard, the Examiner asserts that a maximum transmission range could depend on several factors, such as, type of antenna, battery power, location of the

transmitter, repeater and receiver, etc. Applicants respectfully traverse the rejections for at least the following reasons.

Applicants respectfully submit that one of ordinary skill in the art would clearly understand "maximum transmission range" to mean the normal or nominal transmission range for reliable communication, regardless of the factors which contribute to the range. Most devices have product specifications which define such information, which one of ordinary skill in the art could consult when designing a network. Alternatively, in-situ signal strength measurements can be made, or range problems may become apparent to during network operation. Accordingly, Applicants submit that no further description of the recitation "maximum transmission range" is required, and request that the Examiner withdraw the rejections under 35 U.S.C. §112, 2nd paragraph.

In the Office Action, the Examiner rejects claims 1, 4, 10, 14, 16, 19, 27, 35 and 37 under 35 U.S.C. §102(b) as being anticipated by Brederveld et al. (U.S. Patent No. 5,898,679). Applicants respectfully traverse the rejections for at least the following reasons.

Applicants' claim 1 recites a method for use in a radio communication system including a first transceiver, a second transceiver, and a repeater. The method includes, inter alia, transmitting, by the repeater, a repeat flag to cause the transceivers to suspend further action.

Applicants' independent claim 10 recites a radio communication system including a first transceiver, a second transceiver and a repeater. Upon receiving data from one of either the first or second transceivers in a first time slot, the repeater transmits a repeat flag in a second time slot to cause the transceivers to suspend further action.

Applicants' independent claim 14 recites a repeater for use in a radio communication system including at least two transceivers. Upon receiving data in a first time slot, the repeater transmits a repeat flag in a second time slot to cause the transceivers to suspend further action.

Applicants' independent claim 16 recites a transceiver for use in a radio communication system including at least one other transceiver and a repeater. Upon receiving a repeat flag from the repeater, the transceiver suspends further action until it receives from the repeater, data that was originally transmitted by the at least one other transceiver.

Brederveld et al. discloses a wireless computer network 100 which includes access points 110-112 and mobile stations 120-123. See Fig. 1 of Brederveld et al. Brederveld et al. discloses a wireless relay (repeater) with selective message repeat for uncast messages through utilizing two BLEEP messages sent in an interframe space. The BLEEP messages are a form of acknowledgement messages. See, e.g., col. 2, lines 38-49 of Brederveld et al.

When a repeater detects a transmission by a source end station, the repeater transmits an R-BLEEP in the interframe space. If the destination end station heard the transmission, an S-BLEEP is sent. If the message is a unicast message and the repeater detects the S-BLEEP, then the message is not repeated. In the absence of an S-BLEEP, the message is repeated. If the message is a multicast message, then BLEEP messages are ignored or suppressed and the repeater always retransmits the message. See, e.g., col. 5, line 48 to col. 6, line 24 of Brederveld et al. In the Office Action, the Examiner asserts that Brederveld's R-BLEEP signal reads on the "repeat flag" recited in Applicants' claims. Applicants respectfully disagree.

Applicants respectfully submit that Brederveld's R-BLEEP signal does not cause the source end-station or the destination end-station to suspend further action. Rather, if the destination end-station receives the message transmitted by the source-end station, the destination end-station transmits an S-BLEEP signal immediately after the end of the time slot reserved for the R-BLEEP signal to notify the source end-station of the reception of the message. See, e.g., col. 5, lines 54-61 of Brederveld et al. The destination end-station transmits the S-BLEEP message *regardless* of whether or not the R-BLEEP signal is observed. See col. 6, lines 16-17 of Brederveld et al.

Further, Applicants submit that there is almost no discussion in Brederveld et al. of how stations respond to an R-BLEEP. The only discussion states that the source end-station interprets receiving an R-BLEEP and an S-BLEEP as an acknowledgement that the source end-station has received the data. Further, Brederveld et al. teaches the transmission of BLEEP messages in the interframe space – that is, any time during the dead time between frames, rather than a specific, time order slot in a frame.

Accordingly, Applicants submit that Brederveld et al. does not disclose or suggest the feature of transmitting a repeat flag to cause the transceivers to suspend further action, as recited in Applicants' independent claims 1, 10, 14, 16.

Applicants' independent claim 4, as currently amended, recites a method for transmitting and receiving data according to a frame for use in a network of devices including a first transceiver, a repeater, and at least one other transceiver. The method includes transmitting, by the first transceiver, data for each of the at least one other transceivers in a first time slot of the frame, transmitting, by the repeater, a repeat flag in a second time slot of the frame after the first time slot, and retransmitting, by the repeater, the data transmitted in the first slot in a third time slot of the frame.

Brederveld et al. discloses that an R-BLEEP signal is transmitted by a relay immediately after the end of a message transmitted by a source end-station. However, Applicants respectfully submit that Brederveld et al. does not disclose that the transmission of the message by the source end-station, the transmission of the R-BLEEP signal, and a retransmission of the message by the relay occur in first, second and third time slots, respectively of a frame.

Accordingly, Applicants submit that Brederveld et al. does not anticipate the invention recited in Applicants' independent claim 4.

Applicants' independent claim 27 recites a radio communications system including at least a first transceiver, a second transceiver and a repeater. Upon receipt of a data transmission from the first transceiver, the repeater re-transmits the data transmission from the first transceiver. Upon receipt of a data transmission from the second transceiver before the repeater completely receives or re-transmits the data transmission from the first transceiver, the repeater transmits a data sequence instructing each transceiver to cease the respective transmission.

Applicants' independent claim 35 recites a repeater for use in a radio communication system including at least a first transceiver and a second transceiver. Upon receipt of a data transmission from the first transceiver, the repeater retransmits the data transmission from the first transceiver. Upon receipt of a data transmission from the second transceiver before the repeater completely receives or re-transmits the data transmission from the first transceiver, the repeater transmits a data sequence instructing each transceiver to cease its respective transmission.

Applicants' independent claim 37 recites a transceiver for use in a radio communication system including at least one other transceiver and a repeater. Upon

receipt of a data transmission from the at least one other transceiver, the repeater re-transmits the data transmission from the at least one other transceiver, and upon receipt of the data transmission from the transceiver before retransmitting the data transmission from the at least one other transceiver, the repeater transmits a data sequence instructing each transceiver to cease respective transmissions.

In the Office Action, the Examiner appears to take the position that Brederveld's access point AP 110 reads on the repeater recited in the claims. However, Applicants respectfully submit that Brederveld et al. does not disclose or suggest that the access point AP 110 transmits a data sequence instructing each mobile station to cease its respective transmission, upon receipt of a data transmission from the destination end-station before the access point completely receives or retransmits a data transmission from the source end-station.

Applicants submit that there is no discussion in Brederveld et al. of how the system handles collisions. Rather, the focus in Brederveld et al. is the suppression of unnecessary retransmission of unicast messages when the source and destination are in range of each other. At best, Brederveld et al. discusses that a source station will retransmit the original data if neither BLEEP signal is heard, which may occur if the source is out of range of the destination and there was a collision at the repeater. Accordingly, Applicants submit that Brederveld et al. fails to disclose or suggest the feature of, upon receipt of a data transmission from a second transceiver before a repeater completely receives or retransmits the data transmission from a first transceiver, the repeater transmitting a data sequence instructing each transceiver to cease its respective transmission, and required by Applicants' claims 27, 35 and 37.

For at least these reasons, Applicants submit that Brederveld et al. does not anticipate the inventions recited in Applicants' independent claims 1, 4, 10, 14, 16, 27, 35 and 37, and request that the Examiner withdraw the rejections under 35 U.S.C. §102(b).

In the Office Action, the Examiner rejects claims 2, 3, 5, 11, 15 and 17 under 35 U.S.C. §103(a) as being unpatentable over Brederveld et al. in view of Fujii et al. (U.S. Patent Application Publication No. 2002/0106011). Applicants respectfully traverse the rejections for at least the following reasons.

Applicants submit that Brederveld et al. does not discuss retransmission of data and acknowledgement to the repeater by both the first and second transceiver. Rather, Brederveld teaches that the BLEEP message are acknowledge messages (see, e.g., col. 2, line 47) and thus teaches that the repeater only listens for acknowledgement messages from the destination transceiver (an S-BLEEP) for a unicast message, and ignores any acknowledgement messages for a multicast message.

Similarly, Fujii et al. teaches only that acknowledgements are sent by the slave node (second transceiver) and then the master node (repeater) back to the transmitting slave node (first transceiver). Thus, the combined teachings of Brederweld et al. and Fujii et al. do not suggest that both the transceivers send acknowledgements to the repeater (that the retransmitted data was received, or not) as defined by the claims. Thus, for at least these reasons, as well as based on their dependency from the independent claims, Applicants submit that the inventions recited in claims 2, 3, 5, 11, 15 and 17 are not obvious in view of the combined teachings of Brederveld et al. and Fujii et al., and request that the Examiner withdraw the rejections under 35 U.S.C. §103(a).

In the Office Action, the Examiner rejects claims 6-9, 12, 13 and 18 under 35 U.S.C. §103(a) as being unpatentable over Brederveld et al. in view of Fujii et al. and

Hwang (U.S. Patent Application Publication No. 2003/0108013); rejects claims 20, 21, 28, 29, 36 and 38 under 35 U.S.C. §103(a) as being unpatentable over Brederveld et al. in view of Stutz (U.S. Patent Application Publication No. 2002/0128996); and rejects claims 22-26, 30-35 and 39-43 under 35 U.S.C. §103(a) as being unpatentable over Brederveld et al. in view of Stutz and Soh et al. (U.S. Patent No. 6,539,028).

Applicants submit that Hwang, Stutz and Soh et al. fail to overcome the above-noted deficiencies of Brederveld et al. with respect to independent claims 4, 10, 16, 19, 27 and 35. Accordingly, Applicants request that the Examiner withdraw the rejections of claims 6-9, 12, 13, 18, 20-26, 28-36 and 38-43, in view of their dependency from the independent claims.

Based on the above, it is respectfully submitted that this application is in condition for allowance, and a Notice of Allowance is respectfully requested.

SUMMARY AND CONCLUSION

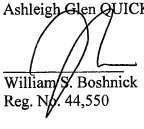
Reconsideration of the outstanding Office Action, and allowance of the present application and all of the claims therein are respectfully requested and believed to be appropriate. Applicants have made a sincere effort to place the present invention in condition for allowance and believe that they have done so.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully Submitted,
Ashleigh Glen QUICK et al.



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